JURNAL RISET BISNIS DAN MANAJEMEN

https://journal.unpas.ac.id/index.php/jrbm/index

THE EFFECT OF FINANCIAL RATIOS IN PREDICTING FINANCIAL DISTRESS IN MANUFACTURING COMPANIES

Risa Arifiana[1], Sholikha Oktavi Khalifaturofi'ah[2]✉
Management Department/Faculty of Economic and Business/Universitas Hayam Wuruk Perbanas
✉sholikha@perbanas.ac.id
Jalan Wonorejo Utara No.16 Rungkut Surabaya

Abstract

The purpose of this study is to analyze the effect of financial ratios in predicting financial distress in manufacturing companies. The sampling technique used in this study is purposive sampling. The research sample is 87 manufacturing companies listed on the Indonesia Stock Exchange (BEI) for the 2016-2020 period. The data analysis technique is logistic regression. The results show that profitability and activity ratio have a negative and significant effect on predicting financial distress. In addition, the liquidity and leverage ratio have no significant effect on predicting Financial Distress. The implication of this study is manufacturing companies have to increase profitability and activity in order to avoid financial distress.

Keywords: financial distress; financial ratios; logistic regression, manufacturing companies

Article Info

History of Article
Received: 06/07/2022
Revised: 18/07/2022
Published: 20/08/2022

Jurnal Riset Bisnis dan Manajemen
Volume 15, No. 2, August 2022,
Page 103-108
ISSN 2088-5091 (Print)
ISSN 2597-6826 (Online)

INTRODUCTION

At the current time of globalization, economic conditions are always changing which can affect the activities of a company's performance (Zahid et al., 2021), if a company is not able to overcome competition, the company will cause losses to the company's financial condition. If the company suffers losses continuously, it will cause financial problems (Khalifaturofi'ah, 2021). Financial problems that arise from a company can cause Financial Distress (Wulandari & Fitria, 2019).

The manufacturing company that experienced Financial Distress and went bankrupt was PT Dwi Aneka Jaya Kemasindo Tbk or DAJK. This company suffers losses continuously so that the company cannot fulfill its debt obligations. Until the third quarter of 2017, the company still experienced a net loss of Rp 59.58 billion and had several debts to a number of banks which reached Rp 913.3 billion which resulted in the end of 2017 the company was declared bankrupt (Sugianto, 2017).

Financial Distress is a condition in which a company experiences financial difficulties prior to bankruptcy (Fahmi, 2016). Financial distress occurs when a company suffers losses due to liabilities that exceed the company's assets so that the company has the potential to go bankrupt (Giovanni et al., 2020). Financial distress occurs before bankruptcy and when the company suffers losses for several years (Sucipto & Muazaroh, 2017). Financial Distress prediction model needs to be developed. Because the prediction of Financial Distress is a very important thing for companies to do to anticipate the risk of bankruptcy that will occur in the future (Agustini & Wirawati, 2019). The company's financial statements can be used as a basis for predicting the condition of Financial Distress in the company by using financial ratio analysis (Sucipto & Muazaroh, 2017).

Factors that can affect financial distress are financial ratios, the first factor that can affect financial distress is liquidity. Liquidity is the company's ability to meet obligations in a timely manner (Fahmi, 2020). This study uses the current ratio to measure liquidity. This is supported by research conducted by Nindita et al., (2014) and Hidayat & Meiranto (2014) which show that the liquidity ratio has a significant negative effect on

financial distress. However, this is different from the research conducted by Adiyanto (2021) and Septiani & Dana (2019) which showed that the liquidity ratio had a significant positive effect on financial distress, and there were different results from research conducted by Dirman (2020), Agustini & Wirawati (2019), Wulandari & Fitria (2019) and Sucipto & Muazaroh (2017) state that liquidity has no effect on financial distress.

The second factor that can affect financial distress is the leverage ratio. The leverage ratio is to measure how much the company is financed by debt (Fahmi, 2020). This study uses the Debt To Equity Ratio to measure leverage. This is supported by research conducted by Giovanni et al., (2020), Septiani & Dana (2019), and Nindita et al., (2014) which show that the leverage ratio has a significant negative effect on financial distress. However, research conducted by Agustini & Wirawati (2019) and Hidayat & Meiranto (2014) shows that leverage has a significant positive effect on financial distress, and there are different results from research conducted by Dirman (2020), Wulandari & Fitria (2019), and Sucipto & Muazaroh (2017) state that leverage has no effect on financial distress.

The third factor that can affect financial distress is profitability. Profitability is to assess the company's ability to generate profits. This study uses Return On Assets to measure profitability. This is supported by research conducted by Agustini & Wirawati (2019), Wulandari & Fitria (2019), and Sucipto & Muazaroh (2017) which showed that profitability ratios had a significant negative effect on financial distress, but research conducted by Giovanni et al., (2020) and Dirman (2020) show that profitability has a significant positive effect on financial distress, and there are different results from research conducted by Nindita et al., (2014) and Hidayat & Meiranto (2014) which state that profitability has no effect on financial distress.

The fourth factor that can affect financial distress is the activity ratio. The activity ratio is a ratio to measure the effectiveness of the company's resource utilization. This study uses Total Assets Turnover to measure activity. This is supported by research by Agustini & Wirawati (2019) and Hidayat & Meiranto (2014) which show the activity ratio has a significant negative effect on financial distress, but it is different from research conducted by Sucipto & Muazaroh (2017) which states that activity has no effect on financial distress.

The reason of this study is manufacturing sector companies make the biggest contribution to national economy (Sholihah et al., 2017), if manufacturing companies experience problems financial distress to financial distress, and the company cannot handle it then will lead to bankruptcy, it will also have an impact on the economy. So that research on the manufacturing sector needs to be done so that companies can carry out early monitoring of financial distress conditions so as not to lead to bankruptcy.

METHOD

The data used in this study is secondary data obtained from the Indonesian Stock Exchange website or on the website of each manufacturing company that is used as a sample. The sample used in this study is a manufacturing company in the 2016-2020 period. While the sampling technique used is the purposive sampling method. With the sample criteria to be taken, namely manufacturing companies listed on the IDX in 2016-2020. Manufacturing companies that publish complete financial reports from the 2016-2020 period. Companies that use the rupiah currency in their financial statements. The company did not obtain negative equity during the 2016-2020 period. Companies that experience negative after-tax profit for 2 consecutive years are categorized as Financial Distress. Companies that experience positive after-tax profits for 2 consecutive years are categorized as non-financial distress.

In this study, the dependent variable and the independent variable are used, including the dependent variable or the influenced variable, namely Financial Distress. The independent variables or variables that influence are the liquidity ratio proxied by Current Ratio, leverage ratio proxied by Debt to Equity, profitability ratio proxied by Return on Assets, and activity ratio proxied by Total Assets Turnover. The definition of operational dependent variable and independent variable shown in Table 1.

Table 1. Variable Operations

No	Variable	Formula
1	Financial Distress	The measurement of Financial Distress in the study is if the company has a negative net profit after tax for 2 consecutive years then the company is experiencing Financial Distress labeled 1, whereas if the company has a positive net profit after tax for 2 consecutive years then the company does not experience Financial Distress. Distress is labeled 2.
2	Current Ratio, X1	(Current Assets)/(Current Liabilities)
3	Debt to Equity Ratio, X2	(Total Debt)/(Total Equity)
4	Return on Assets Ratio, X3	(Net profit after tax)/(Total Assets)
5	Total Assets Turnover Ratio, X4	(Net Sales)/(Total Assets)

The data analysis technique used in this research is descriptive analysis and inferential statistics. Descriptive analysis can provide information from the minimum value, maximum value, average value, and standard deviation of the observed variables the liquidity ratio, leverage ratio, profitability ratio, and activity ratio. The inferential statistic used is logistic regression test.

In the above model, Ln P/1-P is the probability of financial distress, βo is the regression constant, β1–β4 is the regression coefficient of the independent variable, CR is the current ratio, DER is the total debt to equity ratio, ROA is the return on assets, TATO is total assets turnover.

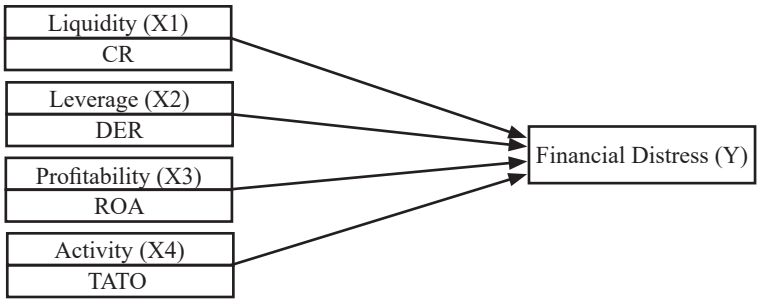

Figure 1. Thinking Framework

RESULTS

The subject of this research is using manufacturing companies that have been listed on the Indonesia Stock Exchange in the 2016-2020 period. The company's financial statement data obtained from the Indonesia Stock Exchange website, namely www.idx.co.id and the websites of each company were used as research samples.

Sampling was carried out in this study by using the purposive sampling method. The total population of manufacturing companies is 195 companies, based on sampling using the purposive method, there are 87 companies that meet the criteria in this study, and a total of 5 years of research so that there are 435 observations in this study. A total of 53 observations of companies experiencing Financial Distress, and as many as 382 observations of companies that do not experience Financial Distress. The following are descriptive statistics of the research sample.

Table 2. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Dev.
CR	435	0.08000	10.48000	2.41302	1.73708
DER	435	0.08000	17.30000	1.11691	1.44467
ROA	435	-0.40000	0.92000	0.04596	0.09643
TATO	435	0.02000	8.43000	1.00165	0.71275

(In decimal units except TATO times)

Based on table 2, the minimum value of the liquidity ratio variable (Current Ratio) is 0.08000. This minimum sample current ratio value is shown by the company Panasia Indo Resources Tbk (HDTX) in 2020, meaning that in that year, the company had the smalles t liquidity among all research samples. This can be seen from the value of current assets which is smaller than the value of current debt. In 2020 this company has current assets of IDR 20,737,818,000 and current debt of IDR 247,260,776,000, which means that this company has current liabilities which is greater than its current assets, in the sense that the company is illiquid so that the company cannot meet its short-term obligations when they fall due. The maximum value of this current ratio is 10.48000. The maximum value in this research sample was shown by the Champion Pacific Indonesia Tbk (IGAR) company in 2020, meaning that among all research samples, the company has the highest liquidity. This can be seen from the asset value higher current than current liabilities. In 2020 this company has current assets of IDR 509,735,319,690 and has current liabilities of IDR 48,639,860,188 which means this company has more current assets large when compared to current debt, in the sense that the company liquid so that the company is able to meet its long-term obligations short at maturity. The average value (mean) of this variable is 2.41302, meaning that the average current assets of all research samples are higher than current liabilities so that the average its liquidity is high and the standard deviation is 1.73708. Where the value of the resulting standard deviation is smaller than the average value (1.73708<2.41302), this means that the liquidity ratio variable (current ratio) has homogeneous data in the sense that the data distribution is good and the data variation is not high.

The minimum value of the leverage ratio variable (debt to equity ratio) is 0.08000. The value of the debt to equity ratio of this minimum sample is shown by the Sido Muncul Herbal and Pharmaceutical Industry company

(SIDO) in 2016 which means that in that year, the company had the smallest leverage among all research samples. This matter can be seen from the total value of liabilities which is smaller than the total value of equity. In 2016 this company has a total liability of IDR 229,729,000,000 and total equity of IDR 2,757,885,000,000 which means this company has a total equity that is greater than its total liabilities, in the sense that this company uses its own capital to run its business, when compared to its debts. The maximum value of this leverage ratio (debt to equity ratio) is 17.30000. The maximum value in this research sample is shown by the company Panasia Indo Resources Tbk (HDTX) in 2020, meaning that among all research samples, the company has the highest leverage. This can be seen from the value of total liabilities is higher than total equity. In 2020 This company has total liabilities of IDR 363,130,561,000 and has total equity of IDR 20,985,638,000 which means this company has a total liabilities that are greater than the total equity owned company, in the sense that this company uses more debt to run their business when compared to their own capital. The average value (mean) of this variable is 1.11691, meaning that the average total liability of all research samples is greater than the total equity owned by the company and the standard deviation is 1.44467. Where the value of the resulting standard deviation is greater than the average value (1.11691<1.44467) this means that the leverage ratio variable (debt to equity ratio) has data that is not homogeneous in the sense that the data has a high data variation.

The minimum value of this profitability ratio variable (return on assets) is -0.40000. The return on assets of this minimum sample is shown by the Keramika company Indonesia Assosiasi Tbk (KIAS) in 2019 means that among all research samples, the company has the lowest profitability. It can be seen that the company suffered a loss. In 2019 this company suffered a loss amounting to IDR 494,426,816,904 and total assets of IDR 1,231,680,564,971 which This means that this company is not efficient in using its total assets so the company suffers a loss. The maximum value of this profitability ratio (return on assets) is 0.92000. The maximum value in this research sample was shown by the Merck Tbk (MERK) company in 2018 meaning that among all research samples, the company has the highest profitability. In 2018 this company has a net profit of IDR 1,163,324,165,000 and has total assets of IDR 1,263,113,689,000 which means this company has a higher net profit small when compared to the total assets owned by the company, in the sense that This company is efficient in using its total assets company because this company has the highest profitability ratio value high among all study samples. The average value (mean) of this variable is 0.04596, meaning that the average net income of all research samples is lower than the total assets so that the average profitability is low and the standard deviation is 0.09643. Where the value of the resulting standard deviation is greater than the average value (0.04596< 0.09643) this means that the profitability ratio variable (return on assets) has inhomogeneous data in the sense that the data has a high data variation.

The minimum value of the activity ratio variable (total assets turnover) is 0.02000. The total asset turnover value of this minimum sample is shown by the company Panasia Indo Resources Tbk (HDTX) in 2019 meaning that among all research samples, the company has the lowest activity ratio. In 2019 The company has net sales of IDR 8,369,686,000 and total assets amounting to IDR 423,791,061,000, which means that this company has a total asset greater than the net sales generated by the company, in the sense that the company has not been maximized in utilizing its assets by the company because the net sales generated are low. The maximum value of this activity ratio (total assets turnover) is 8.43000. The maximum value in this research sample was shown by the company Alakasa Industrindo Tbk (ALKA) in 2016 meaning that among all research samples, the company had the highest activity ratio. This matter can be seen from the net sales value which is greater than the total assets owned by the company. In 2016 the company had net sales amounting to IDR 1,151,605,756,000 and has total assets of IDR 136,618,855,000 which means that the net sales generated by the company are greater if compared to the total assets owned by the company, in the sense that the company have maximized the use of assets owned by the company so that high net sales. The average value (mean) of this variable is 1.00165, meaning that the average net sales of all research samples is slightly higher than the total assets and the standard deviation is 0.71275. Where the value of the resulting standard deviation is smaller than the average value (0.71275< 1.00165) this means that the activity ratio variable (total assets turnover) has homogeneous data in the sense that the data distribution is good and has not high data variation.

Table 3. The results of the logistic regression test

	Coef	S.E	Wald	Df	Sig.	Exp(B)
CR	0.002	0.147	0.000	1	0.988	1.002
DER	0.244	0.166	2.145	1	0.143	1.276
ROA	-37.434	5.568	45.193	1	0.000	0.000
TATO	-1.097	0.549	3.991	1	0.046	0.334
Constant	-1.401	0.583	0.577	1	0.016	0.246

$$\text{Ln} \frac{P}{1-P} = -1{,}401 + 0{,}002CR + 0{,}244DER - 37{,}434\ ROA - 1{,}097TATO$$

The value of the regression coefficient on the liquidity ratio as measured by the current ratio is 0.002 with a significant level of 0.988 > 0.05, so the liquidity ratio does not have a significant effect in predicting Financial Distress. Based on these results, it can be concluded that H1 cannot be accepted or rejected

The value of the regression coefficient on the leverage ratio as measured by the debt to equity ratio is 0.244 with a significant level of 0.143 > 0.05, so the leverage ratio does not have a significant effect in predicting Financial Distress. Based on these results, it can be concluded that H2 cannot be accepted or rejected

The value of the regression coefficient on the profitability ratio as measured by return on assets is -37.434 with a significant level of 0.000 < 0.05, so the profitability ratio has a negative and significant influence in predicting Financial Distress. Based on these results, it can be concluded that H3 is acceptable

The value of the regression coefficient on the activity ratio as measured by total assets turnover is -1.097 with a significant level of 0.046 < 0.05, so the activity ratio has a negative and significant effect in predicting Financial Distress. Based on these results, it can be concluded that H4 is acceptable

DISCUSSION

The results of the logistic regression show that the liquidity ratio has no significant effect in predicting Financial Distress. The liquidity ratio does not have a significant effect on Financial Distress because in the sample of companies studied there is no significant difference in the value of the current ratio of companies that do not experience Financial Distress and companies that experience Financial Distress. Companies with low current ratios are not necessarily categorized as companies experiencing Financial Distress and companies with high current ratios are not necessarily categorized as non-Financial Distress companies. So that the level of company liquidity cannot guarantee that the company will experience Financial Distress in this study, because the current ratio is a measure of short-term liquidity, while Financial Distress is a prediction for the long term (Agustini & Wirawati, 2019). These results are in line with research conducted by Dirman (2020), Agustini & Wirawati (2019), Wulandari & Fitria (2019), and Sucipto & Muazaroh (2017) which showed that the liquidity ratio had no effect on Financial Distress. This result is different from the research conducted by Nindita et al., (2014) and Hidayat & Meiranto (2014) which showed that the liquidity ratio had a significant negative effect on Financial Distress, and was different from the research conducted by Adiyanto (2021) and Septiani & Dana (2019) which shows that the liquidity ratio has a significant positive effect on Financial Distress.

The results of the logistic regression show that the leverage ratio has no significant effect in predicting Financial Distress. The leverage ratio as measured by the debt to equity ratio has no effect on Financial Distress in this study because the average sample of manufacturing companies from 2016-2020 has a debt to equity ratio that fluctuates due to inconsistent increases and decreases. This could be due to a tendency from the company when the company's long-term and short-term debts have matured but at the same time the company has not been able to pay, the company chooses to borrow funds from banks or outside parties who are willing to lend funds to the company to pay off their debts to pay off their debts. maintain and re-run the company's business in order to avoid Financial Distress. Companies with high Debt to Equity are not necessarily categorized as Financial Distress companies, and companies with low Debt to Equity are not necessarily categorized as Nonfinancial Distress companies. These results are in line with research conducted by Dirman (2020), Wulandari & Fitria (2019), and Sucipto & Muazaroh (2017) which shows that the leverage ratio has no effect on Financial Distress. This result is different from research conducted by Giovanni et al., (2020), Septiani & Dana (2019), and Nindita et al., (2014) which showed that the leverage ratio had a significant negative effect on Financial Distress, and was different from research conducted by Agustini & Wirawati (2019) and Hidayat & Meiranto (2014) which shows that the leverage ratio has a significant positive effect on Financial Distress.

The results of the logistic regression show that the profitability ratio has a negative and significant effect in predicting Financial Distress. Where the greater the return on assets, the more effective the use of company assets in generating profits, the company gets the maximum profit, if the company gets maximum profit, the company will have sufficient funds to run its business. With the adequacy of these funds, the probability of the company experiencing Financial Distress conditions is lower. Vice versa, if the return on assets is smaller, the use of company assets is not effective or efficient in generating profits, so that the probability of the company experiencing Financial Distress conditions is higher. These results are in line with research conducted by Agustini & Wirawati (2019), Wulandari & Fitria (2019), and Sucipto & Muazaroh (2017) which showed that the profitability ratio had a significant negative effect on Financial Distress. This result is different from the research conducted by Giovanni et al., (2020) and Dirman (2020) which showed that the profitability ratio had a significant positive effect on Financial Distress, and there were different results from the research conducted by Nindita et al., (2014) and Hidayat & Meiranto (2014)which state that the profitability ratio has no effect on Financial Distress.

The activity ratio is the ratio used to measure the effectiveness of the utilization of the company's resources. One of the activity ratios is total assets turnover, this ratio is used to see the extent to which the overall assets owned by the company are turned over effectively and efficiently. The results of the logistic regression show that the activity ratio has a negative and significant effect in predicting Financial Distress. If the company's asset turnover is faster, the company is considered efficient in using the company's overall assets in generating sales, so that it will be easier for the company to earn profits, then the probability of the company experiencing Financial Distress is lower. And vice versa if the longer the asset turnover, the company is considered inefficient in using all assets owned by the company in generating sales, so that the company will find it difficult to earn a profit, then the probability of the company experiencing Financial Distress is higher. These results are in line with research conducted by Agustini & Wirawati (2019) and Hidayat & Meiranto (2014) which showed that the activity ratio had a negative effect on Financial Distress. This result is different from the research conducted by (Sucipto & Muazaroh (2017) which shows that the activity ratio has no effect on Financial Distress.

CONCLUSION

Liquidity as measured by the current ratio has no effect in predicting Financial Distress in manufacturing companies for the 2016-2020 period. Leverage as measured by the debt to equity ratio has no effect in predicting Financial Distress in manufacturing companies for the 2016-2020 period. Profitability as measured by return on assets has a negative and significant effect in predicting Financial Distress in manufacturing companies for the 2016-2020 period. Activities measured by total assets turnover have a negative and significant effect on predicting Financial Distress in manufacturing companies for the 2016-2020 period

REFERENCES

Adiyanto, Y. (2021). The Influence of Institutional Ownership , Liquidity , and Company Size on Financial Distress. 1(January), 111–120.

Agustini, N. W., & Wirawati, N. G. P. (2019). Pengaruh Rasio Keuangan Pada Financial Distress Perusahaan Ritel Yang Terdaftar di Bursa Efek Indonesia (BEI). E-Jurnal Akuntansi, 26(Januari), 251–280. https://doi.org/10.24843/eja.2019.v26.i01.p10

Dirman, A. (2020). Financial Distress: The Impacts Of Profitability, Liquidity, Leverage, Firm Size, And Free Cash Flow. International Journal of Business, Economics and Law, 22(1), 17–25.

Fahmi, I. (2016). Pengantar Manajemen Keuangan. Alfabeta.

Fahmi, I. (2020). Analisis Laporan Keuangan. Alfabeta.

Giovanni, A., Utami, D. W., & Yuzevin, T. (2020). Leverage dan Profitabilitas dalam Memprediksi Financial Distress Perusahaan Pertambangan Periode 2016-2018. Journal of Business and Banking, 10(1), 151–167. https://doi.org/10.14414/jbb.v10i1.2292

Hidayat, M. A., & Meiranto, W. (2014). Prediksi Financial Distress Perusahaan Manufaktur Di Indonesia. None, 3(3), 1–11.

Khalifaturofi'ah, S. O. (2021). Cost efficiency, innovation and financial performance of banks in Indonesia. Journal of Economic and Administrative Sciences, ahead-of-p(ahead-of-print). https://doi.org/10.1108/jeas-07-2020-0124

Nindita, K., Moeljadi, & Indrawati, N. K. (2014). Prediction on Financial Distress of Mining Companies Listed in BEI using Financial Variables and Non-Financial Variables. 6(34), 226–237.

Septiani, N. M. I., & Dana, I. M. (2019). Pengaruh Likuiditas, Leverage, Dan Kepemilikan Institusional Terhadap Financial Distress Pada Perusahaan Property Dan Real Estate. E-Jurnal Manajemen Universitas Udayana, 8(5), 3110–3137. https://doi.org/10.24843/ejmunud.2019.v08.i05.p19

Sholihah, I. M., Syaparuddin, S., & Nurhayani, N. (2017). Analisis investasi sektor industri manufaktur, pengaruhnya terhadap pertumbuhan ekonomi dan penyerapan tenaga kerja di Indonesia. Jurnal Paradigma Ekonomika, 12(1), 11–24. https://doi.org/10.22437/paradigma.v12i1.3930

Sucipto, A. W., & Muazaroh. (2017). Kinerja Rasio Keuangan Untuk Memprediksi Kondisi Financial Distress Pada Perusahaan Jasa Di Bursa Efek Indonesia Periode 2009-2014. Journal of Business & Banking, 6(1), 81–98. https://doi.org/10.14414/jbb.v6i1.893

Sugianto, D. (2017). Begini Kondisi Keuangan DAJK, Emiten Kemasan yang Pailit.

Wulandari, V. S., & Fitria, A. (2019). Pengaruh Kinerja Keuangan, Pertumbuhan Penjualan Dan Ukuran Perusahaan Terhadap Financial Distress. Jurnal Ilmu Dan Riset Akuntansi, 8(1).

Zahid, M., Naeem, H., Aftab, I., & Mughal, S. A. (2021). From corporate social responsibility activities to financial performance: role of innovation and competitive advantage. Asia Pacific Journal of Innovation and Entrepreneurship, 15(1), 2–13. https://doi.org/10.1108/apjie-04-2020-0046